

COMMERCIAL ITEM DESCRIPTION

SHIPBOARD SIGNS, LABELS, AND MARKINGS,
PREFORMED, ADHESIVE BACKED, PHOTOLUMINESCENT, AND RETROREFLECTIVE

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. SCOPE.

1.1 Scope. This commercial item description establishes the performance, design, test, manufacture, and acceptance requirements for non-developmental preformed, ready-to-use, flexible, adhesive backed signs, labels, and markings designed for use on interior surface ship and submarine surfaces.

1.2 Intended use. Preformed retroreflective markings, signs, and labels (Type A) are intended for general shipboard use. Photoluminescent signs, labels, and markings (Types B and C) are intended to be used to provide shipboard emergency egress information, and to identify the location of selected damage control systems and equipment in situations involving the loss of interior lighting.

2. CLASSIFICATION. Signs, labels, and markings shall be one of three types:

Type A: Adhesive backed signs, labels, and markings constructed of wide-angle prismatic retroreflective material alone or with matched ink/film marking systems.

Type B: Preformed, ready-to-use markings, and striping tape constructed of flexible, nonmetallized photoluminescent material conforming to the requirements listed herein.

Type C: Adhesive backed signs and labels constructed of photoluminescent material in conjunction with wide-angle prismatic retroreflective sheeting.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Commander, Naval Sea Systems Command, ATTN: SEA 05Q, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to commandstandards@navsea.navy.mil, with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil.

3. SALIENT CHARACTERISTICS.

3.1 General. Types A, B, and C signs, labels, and markings shall be precoated with a pressure sensitive adhesive protected by a removable liner and shall be able to conform to the irregularities of a ship's hull and bulkhead. The signs, labels, and markings shall be phosphorous free, non-radioactive, and shall not contain heavy metals or corrosive materials.

3.1.1 Type A. Type A retroreflective sheeting used for shipboard signs and labels shall be a semi-rigid, dimensionally stable, nonmetallized prismatic sheeting with a smooth surface and a distinctive interlocking diamond seal pattern. Primary tooling lines and datum marks, slightly thicker than the seal lines, and thinner, secondary tooling lines, which may be apparent, do not affect the functionality of the sheeting.

3.1.2 Type B. Type B opaque greenish-yellow photoluminescent material shall have a smooth surface and uniform appearance.

3.1.3 Type C. Type C signs and labels shall consist of photoluminescent Type B backgrounds and retroreflective Type A legends.

3.2 Material acceptance test conditions.

3.2.1 Test conditions. Unless otherwise specified herein, all applied and unapplied test samples and specimens shall be conditioned at the standard conditions of 73 ± 3 °F (23 ± 3 °C) and $50 \pm 5\%$ relative humidity for 24 hours prior to testing.

3.2.2 Test panels. Unless otherwise specified herein, when tests are to be performed using test panels, the specimens shall be applied to smooth aluminum cut from ASTM B209 Alloy 5052-H36, 5052-H38, 5154-H38, or 6061-T6 sheets in 0.020-inch (0.051 cm), 0.040-inch (0.102 cm), or 0.063-inch (0.160 cm) thickness. The specimens shall be applied to the panels in accordance with the recommendations of the material manufacturer.

3.3 Physical requirements.

3.3.1 Type A retroreflective sheeting.

3.3.1.1 Physical properties. Type A retroreflective sheeting shall conform to the following physical property performance requirements specified in ASTM D4956:

- a. Minimum coefficient of retroreflection. (Type IX)
- b. Daytime luminance factor. (Type IX)
- c. Daytime color.
- d. Shrinkage.
- e. Flexibility.
- f. Liner removal.
- g. Adhesion.
- h. Impact resistance.
- i. Specular gloss.

The adhesive backing shall meet the requirements specified for ASTM D4956 Class I adhesive backing.

3.3.1.2 Chemical resistance. When applied to panels and conditioned as described in section 3.2, the retroreflective sheeting shall show no effect following immersion in the following chemicals for the associated time:

Chemical	Time
Seawater	24 Hours
SAE #20 Oil	24 Hours
85/15 Reference Fuel	1 Hour (85% Mineral Spirits, 15% Xylol)
10% HCL	10 Minutes
Mineral Spirits	10 Minutes
VM & P Naphtha	10 Minutes
10% NaOH	10 Minutes

3.3.1.3 Flame spread. The retroreflective sheeting shall exhibit a flame spread index of less than 50 when tested in accordance with ASTM E162.

3.3.1.4 Smoke density. The retroreflective sheeting shall produce a non-flaming smoke density value of no more than 140 and a flaming smoke density value of no more than 200 when tested in accordance with ASTM E662.

3.3.1.5 Off-gassing. The signs, labels, and markings shall be tested for off-gassing in accordance with Chapter 7 of the Nuclear Powered Submarine Atmosphere Control Manual, NAVSEA Technical Manual S9510-AB-ATM-010/(U), and shall be certified for a usage category of "Permitted" or "Limited". Testing shall be conducted at a Government approved facility and the results shall be submitted to NAVSEA (Code 05Z9) for evaluation and approval for use. (see 7.3)

3.3.2 Type B photoluminescent material.

3.3.2.1 Luminance. A sample of Type B photoluminescent material shall meet the luminance requirements of ASTM E2072 when tested in accordance with ASTM E2073.

3.3.2.2 Adhesion. Type B photoluminescent material adhesive shall produce a bond that supports a 1.75 lb (0.79 kg) weight for 5 minutes without the bond peeling for a distance greater than 2 inches (51 mm), when tested in accordance with the adhesion test specified in ASTM D4956.

3.3.2.3 Shrinkage. The amount of dimensional change in any direction shall not exceed $\frac{1}{32}$ inch (0.8 mm) for both 10-minute and 24-hour test conditions when tested in accordance with the shrinkage test specified in ASTM D4956.

3.3.2.4 Liner removal. The protective liner attached to the adhesive shall be easily removed without soaking in water or other solutions, without breaking, tearing, or removing any adhesive from the backing when tested in accordance with the liner removal test specified in ASTM D4956.

3.3.2.5 Flexibility. The photoluminescent material shall be sufficiently flexible to show no cracking when tested in accordance with the flexibility test specified in ASTM D4956.

3.3.2.6 Flame spread. The photoluminescent film shall exhibit a flame spread index of less than 50 when tested in accordance with ASTM E162.

3.3.2.7 Smoke density. The photoluminescent film shall produce a non-flaming smoke density value of no more than 140 and a flaming smoke density value of no more than 200 when tested in accordance with ASTM E662.

3.3.2.8 Chemical resistance. When applied to panels and conditioned as described in 3.2, the photoluminescent material shall show no effect following immersion in the following chemicals for the associated time:

Chemical	Time
Seawater	24 Hours
SAE #20 Oil	24 Hours
85/15 Reference Fuel	1 hour (85% Mineral Spirits, 15% Xylol)
10% HCL	10 Minutes
Mineral Spirits	10 Minutes
VM & P Naphtha	10 Minutes
10% NaOH	10 Minutes

3.3.2.9 Off-gassing. The signs, labels, and markings shall be tested for off-gassing in accordance with Chapter 7 of the Nuclear Powered Submarine Atmosphere Control Manual, NAVSEA Technical Manual S9510-AB-ATM-010/(U), and shall be certified for a usage category of "Permitted" or "Limited". Testing shall be conducted at a Government approved facility and the results shall be submitted to NAVSEA (Code 05Z9) for evaluation and approval for use. (see 7.3)

3.3.3 Type C combined retroreflective sheeting and photoluminescent material. Each of the components of Type C signs and labels shall conform to their respective physical requirements defined in 3.3.1 for Type A retroreflective sheeting and 3.3.2 for Type B photoluminescent material.

3.4 General design and construction.

3.4.1 Materials, processes, and parts. Materials that are not nonflammable and self-extinguishing shall be identified to the Government for approval prior to use. Toxic, carcinogenic, or radioactive materials which, if used in constructing the product may pose a personnel or environmental hazard, shall be identified to the Government and approved for use by the Government prior to use.

3.4.2 Workmanship. Physical aspects of the material shall be uniform in appearance and free from scratches, cracks, breaks, pits, dents, chips, sharp projections, or edges, loose parts, or foreign material that may adversely affect serviceability, performance, reliability, safety, endurance, or wear.

4. **REGULATORY REQUIREMENTS.** The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. **PRODUCT CONFORMANCE PROVISIONS.**

5.1 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The Government reserves the right to require proof of such conformance.

5.2 Quality conformance inspections. Product unit lots shall be inspected to determine conformance with this commercial item description and the successful offeror's technical proposal as negotiated. The quality conformance inspection shall consist of a visual and mechanical examination of the products.

5.2.1 Sampling. The sampling and inspection levels shall conform to ANSI/ASQC Z1.4, unless otherwise specified.

6. **PACKAGING.** Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 Part or Identification Number (PIN). The following PIN procedure is for Government purposes and does not constitute a requirement for the contractor.

PIN code:

<u>AA59752</u>	–	<u>X</u>
CID Number		Sign, Label, and Marking Type (see code below)

Sign, Label, and Marking Type	
Type	Code
A	A
B	B
C	C

7.2 Sources of documents.

7.2.1 ASQ documents are available from the American Society for Quality, 600 North Plankinton Ave., Milwaukee, WI 53203, or www.asq.org.

7.2.2 ASTM International standards are available from ASTM International, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959, or www.astm.org.

7.2.3 The Federal Acquisition Regulation may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, or www.arnet.gov/far.

7.3 Material certification. Materials to be installed in submarines are to be controlled to prevent off-gassing, which contaminates the atmosphere and can result in health hazards to personnel or deleterious effects on machinery. These controls are accomplished through the Submarine Material Control Program, which is described in the Nuclear Powered Submarine Atmosphere Control Manual, NAVSEA Technical Manual S9510-AB-ATM-010/(U). Under the Submarine Material Control Program, all materials considered for use on submarines require certification and assignment of a usage category. Under the certification process, candidate materials are selected by Navy activities or contractors, and a request for certification is submitted to the Naval Sea Systems Command, ATTN: SEA 05Z9, 1333 Isaac Hull Avenue, SE, Washington Navy Yard DC 20376-5221. The certification request is accompanied by detailed information, including descriptions of the material, method of application, usage and storage. A chemical analysis is conducted, which is normally accomplished through off-gas testing. The off-gas test is required to be conducted in a Government approved laboratory designated by the preparing activity. Information pertaining to this test requirement may be obtained from the Naval Sea Systems Command, ATTN: SEA 05Z9, 1333 Isaac Hull Avenue, SE, Washington Navy Yard DC 20376-5221. Based on the chemical analysis results, a usage category is assigned to the material defining whether, and to what extent, the material may be used on submarines.

7.4 Ordering data. The contract or order should specify the following:

- CID document number, revision, and CID PIN.
- Retroreflective sheeting daytime color.
- Product conformance provisions.
- Packaging requirements.
- Quantity required.

7.5 Key words.

Labels

Marking

Sheeting, retroreflective

Signs, egress, emergency, photoluminescent, reflective

MILITARY INTERESTS:

Custodians:

Army – GL

Navy – SH

Review Activities:

Army – GL4

Navy – AS, CG, YD

DLA – IS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA – FSS

Preparing Activity:

Navy – SH

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